

## ON ROMANOV'S CONSTANT

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ABSTRACT: We show that the lower density of integers representable as a sum of a prime and a power of two is at least 0.107, improving the previous record of 0.0936275 by Habsieger and Sivak-Fischler.

We also prove that the set of integers with exactly one representation of the form  $p + 2^k$  has positive density. Previous results of this kind needed “at most 15” in place of “exactly one”. To achieve this result we introduce a new method. In particular we make use of uneven distribution of sums of a power of two and a reduced residue class.

This is joint work with Jan-Christoph Schlage-Puchta.